HF115F-H MINIATURE HIGH POWER RELAY

File No.:E134517

File No.:116934

File No.:CQC17002168381

Features

- High sensitive: 0.25W
- Low height: 15.7 mm
- 5kV dielectric strength (between coil and contacts)
- Creepage distance: 10mm
- Meeting VDE 0700, 0631 reinforce insulation
- Product in accordance to IEC 60335-1 available
- Sockets available
- Plastic sealed and flux proofed types available

CONTACT DATA

Contact arrangement	1A, 1B, 1C
Contact resistance	100mΩ max.(at 1A 6VDC)
Contact material	See ordering info.
Contact rating (Sensitive coil)	10A 250VAC
Max. switching voltage	440VAC / 300VDC
Max. switching current	10A
Max. switching power	2500VA
Mechanical endurance	1 x 10^7OPS
Electrical endurance	1H3 type: 1 x 10^5OPS (10A 250VAC, Resistive load, at 85°C, 5s on 5s off)

Notes: 1) The data shown above are initial values.

CHARACTERISTICS

Insulation resistance		1000MΩ (at 500VDC)
Dielectric strength	Between coil & contacts	5000VAC 1min
	Between open contacts	1000VAC 1min
Surge voltage (between coil & contacts)		10kV (1.2 / 50μs)
Operate time (at nomi. volt.)		15ms max.
Release time (at nomi. volt.)		8ms max.
Temperature rise (at nomi. volt.)		55K max.
Shock resistance *	Functional	98m/s²
	Destructive	980m/s²
Vibration resistance *		10Hz to 150Hz 10g/5g
Humidity		5% to 85% RH
Ambient temperature		-40°C to 85°C
Termination		PCB
Unit weight		Approx. 13.5g
Construction		Plastic sealed, Flux proofed

Notes: 1) The data shown above are initial values.
2) * Index is not that of relay length direction.
3) UL insulation system: Class F, Class B.

COIL

Coil power	Approx. 250mW

COIL DATA at 23°C

Nominal Voltage VDC	Pick-up Voltage VDC max. 1)	Drop-out Voltage VDC min. 1)	Max. Voltage VDC 2)	Coil Resistance Ω
5	3.75	0.5	7.5	100 x (1±10%)
6	4.50	0.6	9.0	144 x (1±10%)
12	9.00	1.2	18	576 x (1±10%)
18	13.50	1.8	27	1296 x (1±10%)
24	18.00	2.4	36	2304 x (1±10%)
48 3)	36.00	4.8	72	9216 x (1±15%)
60 3)	45.00	6.0	90	12857 x (1±15%)

Notes: 1) The data shown above are initial values.
2) Maximum voltage refers to the maximum voltage which relay coil could endure in a short period of time.
3) For products with rated voltage ⩾ 48V, measures should be taken to prevent coil overvoltage in order to protect coil in test and application (eg. Connect diodes in parallel).

SAFETY APPROVAL RATINGS

VDE

Contact Material	Specifications	Ratings
$AgSnO_2$	HF115F-H….1(H;Z)(S)(1;2;3)A(G)(F)	10A 250VAC at 85°C
AgCdO	HF115F-H….1(H;Z)(S)(1;2;3)(G)(F)	10A 250VAC at 85°C 6A 400VAC at 85°C

UL/CUL

Contact Material	Specifications	Ratings
AgCdO	HF115F-H….1(H;Z)(S)(1;2;3)(G)(F)	10A 250VAC

Notes: 1) All values unspecified are at room temperature.
2) Only typical loads are listed above. Other load specifications can be available upon request.

ORDERING INFORMATION

HF115F-H / 012 -1H S 3 A F (XXX)

Type								
Coil voltage	5, 6, 12, 18, 24, 48, 60VDC							
Contact arrangement	**1H:**1 Form A	**1D:**1 Form B	**1Z:**1 Form C					
Construction[1) 2)]	**S:** Plastic sealed	**Nil:** Flux proofed						
Version	**1:** 3.5mm 1 pole	**2:** 5.0mm 1 pole	**3:** 5.0mm 1 pole					
Contact materia[3)]	**A:** $AgSnO_2$	**B:** AgNi	**Nil:** AgCdO	**G:** AgCdO+Au plated	**AG:** $AgSnO_2$+Au plated	**BG:** AgNi+Au plated		
Insulation standard	**F:** Class F	**Nil:** Class B						
Special code[4)]	**XXX:** Customer special requirement	**Nil:** Standard						

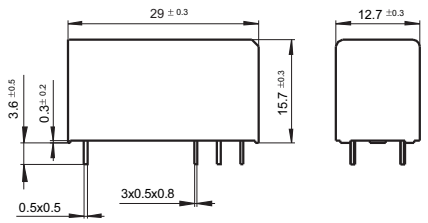
Notes: 1) We recommend flux proofed types for a clean environment (free from contaminations like H_2S, SO_2, NO_2, dust, etc.).
We suggest to choose plastic sealed types and validate it in real application for an unclean environment (with contaminations like H_2S, SO_2, NO_2, dust, etc.).
2) Contact is recommended for suitable condition and specifications if water cleaning or surface process is involved in assembling relays on PCB.
3) For gold plated type, the min. switching current and min. switching voltage is 10mA 5VDC.
4) The customer special requirement express as special code after evaluating by Hongfa. e.g.(335) stands for product in accordance to IEC 60335-1 (GWT).

OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

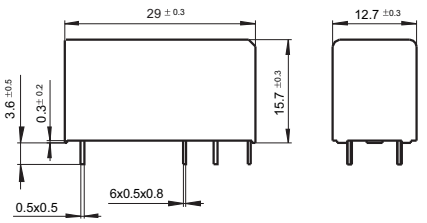
Unit: mm

Outline Dimensions

3.5mm Pinning (HF115F-H/ □□□ -□□ -1-□)



5mm Pinning (HF115F-H/ □□□ -□□-2/3-□)

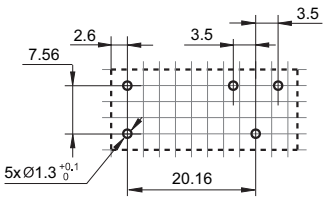


OUTLINE DIMENSIONS, WIRING DIAGRAM AND PC BOARD LAYOUT

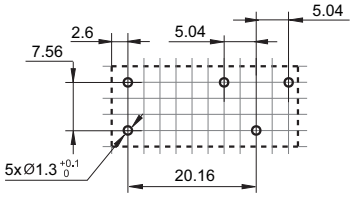
Unit: mm

PCB Layout (Bottom view)

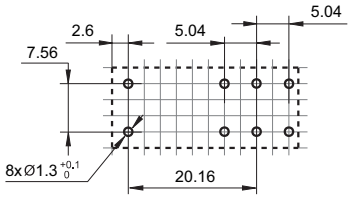
3.5mm Pinning, 1 Pole



5mm Pinning, 1 Pole



5mm Pinning, 1 Pole



Wiring Diagram (Bottom view)

3.5/5mm Pinning, 1 Pole, 10A, HF115F-H/ □□□ -□□ -□ -1/2 -□

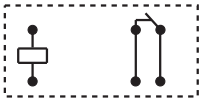
1 Form A

1 Form B

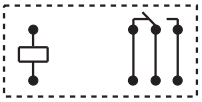
1 Form C

5mm Pinning, 1 Pole, 10A, HF115F-H/ □□□ -□□ -□ -3 -□

1 Form A



1 Form B

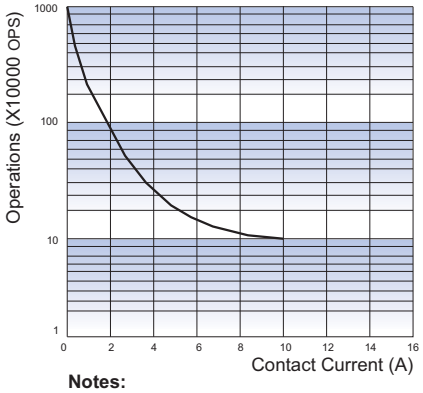


1 Form C

Remark: 1) In case of no tolerance shown in outline dimension: outline dimension ≤1mm, tolerance should be ±0.2mm; outline dimension >1mm and ≤5mm, tolerance should be ±0.3mm; outline dimension >5mm, tolerance should be ±0.4mm.
2) The tolerance without indicating for PCB layout is always ±0.1mm.
3) The width of the gridding is 2.52mm.

CHARACTERISTIC CURVES

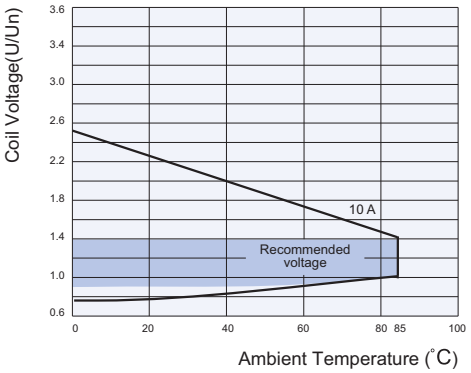
ENDURANCE CURVE



Notes:

1) Curve : 1H3 type
2) Test conditions:
NO, 250VAC, Resistive load,
Flux proofed, at 85°C, 5s on 5s off.

COIL OPERATING RANGE (DC) *



Notes: * The use of a relay with an energising voltage other than the rated coil voltage may lead to reduced electrical life.
An energising voltage over the abver range may damage the insulation of relay coil.

Disclaimer